

Handheld for
'Point and Shoot'
Deformation
& Strain
Measurements
Digital 3D Image
Correlation
System Q-480



In-field measurement on a large wind turbine blade with the handheld DIC Q-480 system.

Applications

- Testing of large structures (aircraft wings, wind turbine blades, undercarriage, buildings etc...)
- Measurement of multiple areas with a single loading cycle
- Locating strain hotspots
- FEA Validation
- Measurement of areas with difficult accessibility

Features

- 'Point and shoot' with real-time results
- Out-of-the-box with no calibration or setup
- Touch screen for easy handling
- Handles hundreds of areas of interest
- Latest in hardware and software sensor positioning
- Can access hard-to-reach areas



Introduction

The Q-480 handheld Digital Image Correlation (DIC) System is a completely innovative approach to DIC measurements. Based on our proven Q-400 standard DIC system, it is aimed at the industrial user requiring an out-of-the-box solution for deformation and strain measurements on large structures, here data from many measurement locations is required. The ruggedized system takes the technology from the R&D department to the Test and Evaluation department and in-field.

Philosophy

The Q-480 system is an out-of-the-box 'point and shoot' concept with no calibration or setup. The Q-480 has been adapted to suit industrial use on large structures. An almost unlimited number of reference images can be taken across the structure before the loading is applied. When revisiting each measurement location to acquire the second image, the system is repositioned using a novel hardware and software repositioning solution to minimize the rigid body motion, the strain field can be instantly seen.

Design

The fixed design of the sensor means that the system does not require any setup or calibration like standard DIC systems. The integrated sensor head contains 2 CCD cameras, a smaller version of Dantec Dynamics' unique HILIS light source, repositioning laser pointers and control buttons. An option of a movable touch screen display improves usability in confined testing environments.

Software

The Q-480 runs on Dantec Dynamics' standard ISTR4-4D software with additional modules to support the use of the handheld sensor. The software repositioning tool allows the user to minimise the rigid body motion by 'steering the user' to the correct position where the difference between the final loaded image and the reference image is minimized. Once this position has been found, within a defined threshold, the displacement or strain results automatically appear overlaid on the live image and the user is free to save this image and move on.



Robustness

The electronics and laptop are integrated in a robust Pelicase for portability and to match the typical testing environment.

Industrial Partner

The system has been developed for over 2 years with the help of an industrial partner to greatly aid product testing and feedback in a real world engineering environment.

Additional information

For additional information please contact your Dantec Dynamics representative. The specifications in this document are subject to change without notice.

www.dantecdynamics.com